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# Integration of mathematical and natural-science knowledge in school students' project-based activity

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## Abstract

© Authors. New educational standards implementation prioritizes the projective beginning of training in school education. Therefore, consideration of educational activity only as the process of obtaining ready knowledge should be abandoned. Thus the relevance of the studied problem is substantiated by the need to develop methodical works connected with the introduction of inter-subject projects into mathematics teachers' pedagogical activity as mathematics has a wide application in various sciences, though, at lessons, it is left behind due to time limits and insufficient mathematical apparatus school students possess. All that said specifies the goal of the paper: to define opportunities of project-based activity application in integration of mathematical and natural-science disciplines and development of methodical recommendations on its broad application in the course of training in the subject. The key research method of this problem is modeling the system of possible project-based activity directions aimed to work purposefully to increase results in subject studied as well as to develop meta-subject abilities. The paper proves the necessity to apply project-based technology in the form of inter-subject projects on mathematics; the basic models of school disciplines integration in the context of project-based learning opportunities realization are revealed; project themes of integrated disciplines that differ in time periods, volume and quantity are elaborated; features of their use in the course of studying mathematics are identified. Practical application of this system compensates the lack of tools of meta-subject technologies in pedagogical activity as it demands the ability to work in team, communicative skills, tolerance, self-organization, abilities to set goals independently, to achieve them and to analyze obtained results.

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## Keywords

Additional mathematical education, Integration of mathematical and natural-science knowledge, Inter-subject projects, Meta-subject abilities, Project-based activity

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